

FOREST ROAD EXCISE TAX SUMMARY SHEET

Region: SOUTHEAST

Timber Sale Name: FLAT RAT

Application Number: 71851

Filled out by: Robert Travis

Excise Tax Applicable Activities

Construction: 8,080 linear feet

Road to be constructed (optional and required) but not abandoned

Reconstruction: 1,480 linear feet

Road to be reconstructed (optional and required) but not abandoned

Abandonment: 0 linear feet

Abandonment of existing roads not reconstructed under the contract

Deactivation: 0 linear feet

Road to be made undriveable but not officially abandoned.

Pre-Haul Maintenance: 250 linear feet

Existing road to receive maintenance work (specifically required by the contract) prior to haul

Excise Tax Exempt Activities

Temporary Optional Construction: 0 linear feet

Optional roads to be constructed and then abandoned

Temporary Optional Reconstruction: 0 linear feet

Optional roads to be reconstructed and then abandoned

New Abandonment: 0 linear feet

Abandonment of roads constructed or reconstructed under the contract

Flat Rat Timber Sale
Road Plan Summary
Application #71851
Date: 12-5-2003
Revised: 1-23-2004
By Robert Travis, PE

Required construction 8,080 feet
Required reconstruction 1,480 feet
Required pre-haul maintenance 250 feet

Purchaser shall purchase and apply 195 yards of 2½ inch minus rock from a commercial source.

Purchaser shall purchase and install the following culverts:
18 in x 32 ft by 1 culvert 18 in by 36 ft by 2 culverts
24 in x 34 ft by 1 culvert

Purchaser maintenance on the following roads:
A-4300 (41+50 to 45+00), A-4360, A-4365, R-4000 (13+50 to 91+94), R-4500

Designated maintenance on the following roads:
A-4200, A-4220, R-4000 (0+00 to 13+50)

Bill of Sale & Contract for Forest Products

-Date of road plan 12-2-2003
-Road use authorization (road numbers)
A-4200, A-4220, A-4300, A-4360, A-4365; R-4000, R-4500
-Roads not ok to be blocked
A-4365, R-4500, R-4000
-Current easement (easement # & road number)/ Road use permit information/ conditions
SDS-LVF- DNR 3 way agreement dated 11-4-1984 for the A-4200, A-4300, A-4360, A-4365, R-4000;
SDS – DNR easement exchange dated XXXX for the R-4500
LVF Road use permit for the A-4220

Forest Practice information:

RMAP Number: R270086L
Construct 9,810 feet of road (required & optional, construction, reconstruction, pre-haul)
Abandon 0 feet of road, steepest side slope & planned abandonment date
Maximum 45% sideslope of construction
Length of temporary roads and planned abandonment date... NONE
Size and location of rock pits... NONE, commercial
Road maintenance 15, 160 feet

SEPA information

Acres of new road = 15 ft *8,080 feet = 2.8 acres
Plan on closing no spurs for a total of 0 feet of road

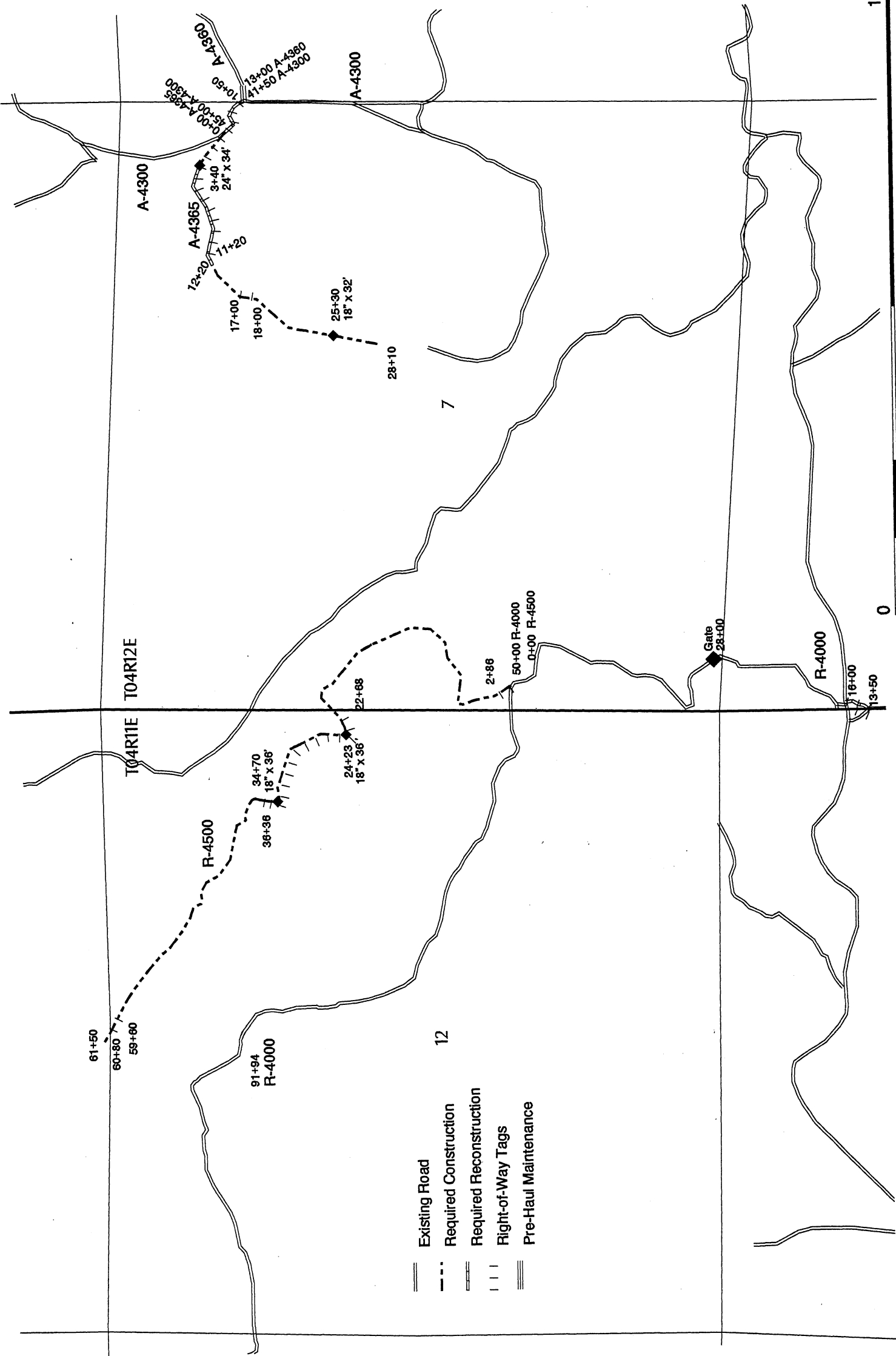
Haul route

Bill Moore road to Snowden road to Loop Road to Highway 141 to Highway 141 Alt to Highway 14

ROAD PLAN

SALE NAME: Flat Rat
AGREEMENT NO.: 71851
GRANT: Forest Board Transfer

REGION: Southeast
COUNTY: Klickitat



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
DOUG SUTHERLAND, COMMISSIONER OF PUBLIC LANDS

FLAT RAT TIMBER SALE ROAD PLAN
SECTION 12, TOWNSHIP 4 NORTH, RANGE 11 EAST, W.M.
SECTION 7, TOWNSHIP 4 NORTH, RANGE 12 EAST, W.M.
KLICKITAT COUNTY

AGREEMENT NO.: 71851 DATE: 12-2-2003

SECTION 0 - SCOPE OF PROJECT

This project includes but is not limited to construction including:

- clearing;
- grubbing;
- right of way debris disposal;
- excavation and/or embankment to subgrade;
- landing construction;
- acquisition and installation of drainage structures;
- acquisition and application of rock;

This project includes, but is not limited to reconstruction including:

- clearing existing excavation and embankment slopes;
- grubbing existing excavation and embankment slopes;
- right of way debris disposal;
- constructing ditches;
- realigning road segments;
- widening road segments;
- grading and shaping existing road surface and turnouts;
- compaction of road surface;
- acquisition and application of rock;

This project includes, but is not limited to pre-haul maintenance including:

- grading and shaping existing road surface and turnouts;

SECTION 1: GENERAL CLAUSES

SECTION 1.1: GENERAL: GENERAL CLAUSES

1.1-1

Clauses in this plan apply to all construction, reconstruction, or pre-haul maintenance including landings unless otherwise noted.

1.1-2

Construction or reconstruction of the following roads is required. All roads shall be constructed or reconstructed or pre-haul maintained on the State's location and in accordance with this Road Plan.

<u>Road</u>	<u>Station</u>	<u>Type</u>
A-4300	41+50 TO 45+00	RECONSTRUCTION
A-4360	10+50 TO 13+00	Pre-haul
A-4365	0+00 TO 3+40	CONSTRUCTION
A-4365	3+40 TO 12+20	RECONSTRUCTION
A-4365	12+20 TO 28+10	CONSTRUCTION
R-4000	13+50 TO 16+00	RECONSTRUCTION
R-4500	0+00 TO 61+50	CONSTRUCTION

1.1-4

If the purchaser desires a road location or design change, a revised road plan shall be submitted to the State for consideration.

1.1-9

On this plan quantities are minimum acceptable values. Additional quantities required by the State because of hidden conditions or Purchaser's choice of construction season or techniques shall be at the Purchaser's expense. Hidden conditions include, but are not limited to: solid subsurface rock subsurface springs, saturated ground, and unstable soil.

SECTION 1.2 - GENERAL: CONSTRUCTION CONSTRAINTS

1.2-1

The construction or reconstruction or pre-haul maintenance of any roads specified herein shall not be permitted between November 1st and March 31st unless authority to do so is granted, in writing, by the Contract Administrator.

1.2-2

Purchaser shall not use roads constructed, reconstructed or maintained under this Road Plan for hauling, other than timber cut on the right of way, without written approval from the Contract Administrator.

SECTION 1.2.1 - GENERAL: CONSTRUCTION CONSTRAINTS: CONSTRUCTION SEQUENCE

1.2.1-1

Pioneering shall not extend past construction that will be completed during the current construction season. Drainage shall be provided on all uncompleted construction as approved, in writing, by the Contract Administrator.

Clearing and grubbing shall be completed prior to starting excavation and embankment.

Culvert placement in live streams shall precede embankment where culverts are to be placed along natural ground. Temporary diversion culverts shall be provided when designed culverts are elevated above natural ground within embankments.

Culverts and rolling dips shall be installed in completed subgrade as construction progresses.

Subgrade, ditches, culvert and rolling dips installation shall be completed and are subject to written approval by the Contract Administrator prior to rock application.

SECTION 1.3 - GENERAL: HAULING CONSTRAINTS

1.3-1

Rock hauling shall not be permitted between November 1st and March 31st unless approved in writing, by the Contract Administrator.

1.3-2

Timber haul shall not be permitted between November 1st and March 31st unless authorized, in writing, by the Contract Administrator.

SECTION 1.5 - GENERAL: ROAD MAINTENANCE

1.5-1

Maintenance on the following roads shall be performed in accordance with Purchaser Road Maintenance Specifications.

<u>Road</u>	<u>Stations</u>
R-4000	13+50 TO 91+94
R-4500	0+00 TO 61+50
A-4300	41+50 TO 45+00
A-4360	0+00 TO 13+00
A-4365	0+00 TO 28+10

1.5-2

Per Clause C-60, maintenance on the following roads shall be performed by designated maintainer. Designated maintainer shall be selected by the Contract Administrator.

<u>Road</u>	<u>Station</u>
A-4200	0+00 to 30+00
A-4220	0+00 to 10+00
R-4000	0+00 to 13+50

1.5-3

Snowplowing shall not be permitted unless authorized, in writing, by the Contract Administrator.

1.5-4

At termination of haul final maintenance shall be performed on the following roads. At minimum, final maintenance shall consist of blading the road with a motor grader, removing berms, crowning or outsloping the road as specified in the Typical Section Sheet and/or Clause 6.1-1, reshaping rolling dips and/or water bars to specification, pulling ditches and cleaning culvert inlets and outlets. The finished road surface shall drain freely and shall be smooth, firm and free of chuckholes.

<u>Road</u>	<u>Stations</u>
R-4000	13+50 to 91+94
R-4500	0+00 TO 61+50
A-4300	41+50 to 45+00
A-4360	0+00 TO 13+00
A-4365	0+00 TO 28+10

SECTION 2 - CLEARING

SECTION 2.1 - R/W TIMBER

2.1-1

Fell all vegetative material larger than 2 inches dbh or over 4 feet high between the marked right-of-way boundaries or if not marked in the field, between clearing limits specified on the Typical Section Sheet.

2.1-2

On the following roads, deck all merchantable right-of-way timber. Decks shall be parallel to the road centerline and within the cleared right-of-way. Decks shall be free of dirt, limbs and other right-of-way debris, and removable by standard log loading equipment from the roadbed.

<u>Road</u>	<u>Stations</u>
R-4500	0+00 TO 2+86
R-4500	22+68 TO 36+36
R-4500	59+60 TO 60+80
A-4300	41+50 TO 45+00
A-4365	0+00 TO 11+20

SECTION 3 - GRUBBING

SECTION 3.1- GRUBBING: GENERAL

3.1-1

All stumps shall be removed that fall between grubbing limits shown on the Typical Section Sheet. Those with undercut roots shall be removed.

3.1-2

Grubbing limits are defined as the entire area between the external limits shown on the Typical Section Sheet.

3.1-3

Within waste and debris areas, removal of stumps shall not be required, provided that they are cut flush with the ground.

SECTION 4 - DEBRIS DISPOSAL AND REMOVAL

SECTION 4.1 - DEBRIS DISPOSAL AND REMOVAL: GENERAL

4.1-1

Right-of-way debris is defined as all non-merchantable vegetative material larger than one cubic foot in volume, within the grubbing limits.

SECTION 4.2 - DEBRIS DISPOSAL AND REMOVAL: PLACEMENT

4.2-2

Right-of-way debris shall not be placed against standing timber.

4.2-3

Right-of-way debris shall be scattered outside the grubbing limits on the downhill side of the road.

SECTION 5 - EXCAVATION

SECTION 5.1 - EXCAVATION: GENERAL

5.1-1

Unless controlled by construction stakes or specific design sheets herein, roads shall be constructed in accordance with dimensions shown on the Typical Section Sheet.

5.1-2

Purchaser shall not bury merchantable material.

5.1-3 Road grade and alignment shall conform to the State's marked location and drawings. Grade and alignment shall have smooth continuity without abrupt changes in direction. Maximum grades are : 15 percent favorable and 15 percent adverse or as specified on drawings. Minimum curve radius is 70 feet.

5.1-4 Except as designated on the curve widening list, extra widening on the inside of curves shall be as indicated below.

2 feet extra	80 to 100 foot radius curves.
4 feet extra	50 to 79 foot radius curves.

5.1-5 Where sided slopes are 0% to 15%, cut at centerline shall not exceed one foot unless approved by the Contract Administrator.

5.1-6 On the following roads, the existing subgrade shall be widened to the dimensions shown on the Typical Section Sheet.

<u>Road</u>	<u>Stations</u>
A-4300	41+50 TO 45+00
A-4365	3+40 TO 12+20
R-4000	13+50 TO 16+00

5.1-7 Roads shall be constructed or reconstructed to the dimensions shown on the Typical Section Sheet, within the tolerance listed below. Tolerance classes for each road are listed on the Typical Section Sheet.

<u>Tolerance Class</u>	<u>A</u>	<u>B</u>	<u>C</u>
Road Width (feet)	+1.5	+1.5	+2.0
Subgrade elevation (feet+/-)	0.5	1.0	2.0
Centerline alignment (feet lt./rt.)	1.0	1.5	3.0

5.1-8 Excavation slopes shall be constructed no steeper than shown on the following table:

<u>Material Type</u>	<u>Excavation Slope Ratio</u>
Common Earth (on side slopes of 55%).....	1:1
Common Earth (55% to 70% sideslopes).....	¾:1
Common Earth (on slopes over 70%).....	½:1
Fractured or loose rock.....	½:1
Hardpan or Solid rock.....	¼:1

5.1-9 Excavation and embankment slopes shall be constructed to a uniform line and left rough for easier revegetation.

5.1-10 Except as construction staked or designed. Embankments shall be widened as follows:

<u>Height at Centerline</u>	<u>Subgrade Widening</u>
Less than 6 feet.....	2 feet
6 feet or over.....	4 feet

5.1-11 Embankment slopes shall be constructed no steeper than shown on the following table:

<u>Material Type</u>	<u>Embankment Slope Ratio</u>
Common Earth and rounded gravel	1-1/2:1
Angular rock	1-1/4:1
Sandy soil	2:1

5.1-12 Organic material shall be excluded from embankment.

5.1-13 Where side slopes exceed 55 percent, full bench construction shall be utilized for the entire subgrade width except as construction staked or designed.

5.1-14 Waste material may be deposited adjacent to the road prism on side slopes up to 55 percent if the waste material is compacted and more than 100 feet away from live streams. On side slopes of 55 percent or more, all excavation shall be end hauled or pushed to designated embankment sites. All waste embankments shall be compacted in horizontal layers not exceeding 2 feet.

5.1-21 Waste material shall not be deposited within 50 feet of a cross drain culvert installation.

5.1-22 On the following roads, turnouts shall be constructed as designated on the Turnout List. Additional turnouts shall be constructed to provide a maximum distance of 1000 feet between turnouts and shall be adjusted to fit final alignment and sight distances.

<u>Road</u>	<u>Stations</u>
A-4365	15+40
R-4500	0+00 to 61+50

SECTION 5.2 - EXCAVATION: PIONEER ROADS

5.2-1 Road pioneering operations shall not undercut the final cut slope, deposit excavated material outside the clearing limits or restrict drainage.

SECTION 5.3 - EXCAVATION: COMPACTION

5.3-1 All embankment and waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lifts. Sidehill embankments too narrow to accommodate excavation equipment may be placed by end dumping or side casting until sufficiently wide to support the equipment.

SECTION 5.4 - EXCAVATION: SEDIMENTATION

5.4-1 Sediment bearing runoff shall not be permitted to enter into streams.

SECTION 5.5 - EXCAVATION: SUBGRADE COMPACTION

- 5.5-1
- Finished subgrade shall be shaped as specified in Clause 6.1-1 and as shown on the Typical Section Sheet. Surface shall be graded and compacted to a uniform, firm, rut-free surface to ensure runoff in an even, unconcentrated manner.
- 5.5-2
- On the following roads, subgrades shall be compacted full width except ditch. Compaction shall be by a smooth-drum vibratory roller weighing at least 16,000 pounds. Six complete passes shall be made at a maximum operating speed of 3 mph.

<u>Road</u>	<u>Stations</u>
A-4300	41+50 TO 45+00
A-4365	0+00 TO 28+10
R-4000	13+50 TO 16+00
R-4500	0+00 TO 61+50

SECTION 6 - DRAINAGE

SECTION 6.1 - DRAINAGE: SURFACE DRAINAGE

- 6.1-1
- On the following roads, surfaces shall be shaped to augment the escape of surface runoff.

<u>Road</u>	<u>Stations</u>	<u>Shape of Road Surface</u>
A-4300	41+50 TO 45+00	Crown 4 inches
A-4365	0+00 TO 3+40	Outslope 4 inches in 10 feet
A-4365	3+40 TO 5+75	Crown 4 inches
A-4365	5+75 TO 28+10	Outslope 4 inches in 10 feet
R-4000	13+50 TO 16+00	Outslope 4 inches in 10 feet
R-4500	0+00 TO 10+15	Crown 4 inches
R-4500	10+15 TO 61+50	Outslope 4 inches in 10 feet

- 6.1-3
- Berms shall be removed from shoulders or constructed ditches to permit escape of runoff.

SECTION 6.2 - DRAINAGE: CULVERTS/DOWNSPOUTS/FLUMES

SECTION 6.2.1 - DRAINAGE: CULVERTS/DOWNSPOUTS/FLUMES: GENERAL

- 6.2.1-1
- Purchaser shall furnish, install and maintain galvanized AASHTO specification No. M36 or corrugated polyethylene tubing AASHTO classification "Type S" and AASHTO designation No. M294 culverts as designated on the Culvert List.
- 6.2.1-2
- Annular corrugated bands and culvert ends shall be used on metal culverts. On culverts 24 inches in diameter and smaller, bands shall have a minimum width of 12 inches; on culverts over 24 inches in diameter, bands shall have a minimum width of 24 inches. Manufacturers approved connectors shall be used for corrugated polyethylene tubing.

SECTION 6.2.2 - DRAINAGE: CULVERTS/DOWNSPOUTS/FLUMES: INSTALLATION

6.2.2-1

Culvert, downspout, flume and energy dissipater installation shall be in accordance with Culvert and Drainage Specification Detail and the National Corrugated Metal Pipe Association Installation Manual for Corrugated Steel Drainage Structures. Polyethylene tubing shall be installed in a manner consistent with the manufacturer's recommendations.

SECTION 6.3 - DRAINAGE: DITCHES

6.3-1

Ditches shall be constructed in accordance with dimensions shown on the Typical Section Sheet and shall drain freely to culverts, rolling dips and ditchouts.

6.3-2

Shaping the ditch line, culvert headwalls, and catch basins shall be completed prior to application of rock and shall be done in accordance with the Typical Section Sheet and Standard Details Culvert and Drainage Specification Details.

6.3-5

Construction and reshaping ditches, culvert headwalls and catch basins shall be completed prior to timber haul and shall be done in accordance with the Typical Section Sheet and Culvert and Drainage Specification Details.

SECTION 6.7: DRAINAGE: ROLLING DIPS

6.7-1

On the following roads rolling dips shall be constructed in accordance with the Rolling Dip Detail sheet at locations as specified on the Rolling Dip List. **ROLLING DIPS SHALL BE INSTALLED AT THE TIME OF CONSTRUCTION AND SHALL BE CONTINUOUSLY MAINTAINED IN AN OPERABLE CONDITION.** Rolling dips shall be installed with a crawler tractor. Use of other equipment shall not be permitted without prior written approval of the Contract Administrator.

<u>Road</u>	<u>Stations</u>
A-4300	41+50 TO 45+00
A-4365	0+00 to 28+10
R-4000	14+00
R-4500	0+00 to 61+50

SECTION 7 - ROCK

SECTION 7.1 - ROCK SOURCE

7.1-5

Rock for construction or reconstruction under this contract may be obtained from any commercial source as approved in writing by the Contract Administrator. Purchaser shall submit to the Southeast Region Engineer or their designee, laboratory tests for the rock to be used. Tests shall include degradation and Los Angeles Rattler test

SECTION 7.2 - ROCK: MANUFACTURE

SECTION 7.2-1 - ROCK: MANUFACTURE: SPECIFICATIONS

7.2.1-6
2 ½ INCH MINUS CRUSHED ROCK

%	passing 2 ½ " square sieve.....	100%
%	passing 2" square sieve.....	60 - 100%
%	passing 1" square sieve.....	50 – 70%
%	passing ¾" square sieve.....	30 – 50%
%	passing U.S. #40 sieve.....	16%
%	passing U.S. #200 sieve.....	5% Max

All percentages are by weight.
The portion of ballast retained on ¼ inch sieve shall not contain more than 0.1 percent vegetative debris or trash.

SECTION 7.2.2 - ROCK: MANUFACTURE: MEASUREMENT

7.2.2-1
Measurement of the 2 ½ inch rock shall be on a cubic-yard-truck measure basis. The Contract Administrator shall measure each truck prior to rock hauling. The Contract Administrator shall periodically require that a load be flattened off and its volume calculated. An average of such volumes for each truck shall be used to tally the volume hauled. The purchaser shall provide and maintain load tally sheets for each truck and shall give them to the contract administrator.

SECTION 7.4 - ROCK: APPLICATION

SECTION 7.4.2 - ROCK: APPLICATION: PLACEMENT

- 7.4.2-1
Apply at least the minimum required rock quantity as shown on the Typical Section Sheet.
- 7.4.2-2
Subgrade shall be subject to approval, in writing, by the Contract Administrator prior to application of rock.
- 7.4.2-7
Turnouts and curve widening shall have rock applied to the same depth and specifications as the traveled way.
- 7.4.2-8
Each lift of rock shall be shaped as specified in Clause 6.1-1 and shall be uniform, firm, and rut-free to ensure surface runoff in an even, unconcentrated manner.

SECTION 7.4.3 - ROCK: APPLICATION: COMPACTION

- 7.4.3-1
On the following road, rock shall be spread and compacted full width in one six inch lift, uncompacted depth. Compaction shall be by smooth drum vibratory roller weighing at least 16,000 pounds. Six complete passes shall be made at a maximum speed of 3 m.p.h. Unless otherwise directed by the Contract Administrator, water shall be added to

facilitate mixing and compaction. The finished surface shall be shaped as specified in Clause 6.1-1 and shall be smooth firm and free of chuckholes and ruts.

<u>Road</u>	<u>Stations</u>
R-4000	13+50 TO 16+00

7.4.3-2
On the following road, rock shall be spread and shaped with a motor grader concurrently with rock hauling operations.

<u>Road</u>	<u>Stations</u>
A-4365	2+40 TO 3+40
R-4500	0+00 TO 61+50

SECTION 8 - STRUCTURES

SECTION 8.1 - STRUCTURES: SIGNS

8.1-2
The Purchaser shall be responsible for the purchase and installation of the following road signs. Signs shall comply with the U.S. Department of Transportation, Federal Highway Administration's "Standard Highway Signs" manual.

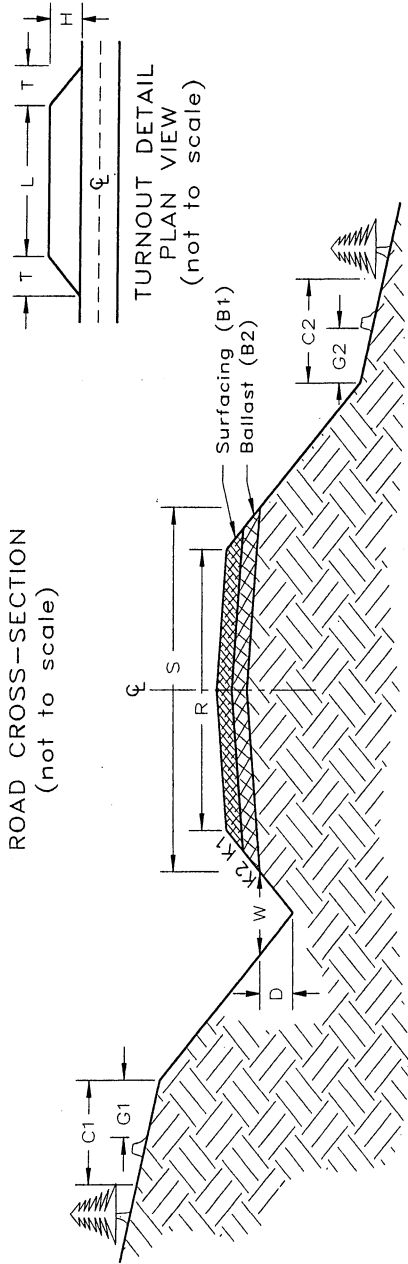
<u>Road</u>	<u>Station</u>	<u>Sign</u>
Bill Moore Road	¼ mile each side of junction with A-4200	Log Trucks Ahead
Snowden Road	¼ mile each side of junction with R-4000	Log Trucks Ahead

SECTION 8.5 - STRUCTURES: CATTLE GUARDS/GATES

8.5-5
On the following road, Purchaser shall keep gate closed except for during periods of hauling.

<u>Road</u>	<u>Stations</u>
R-4000	28+00

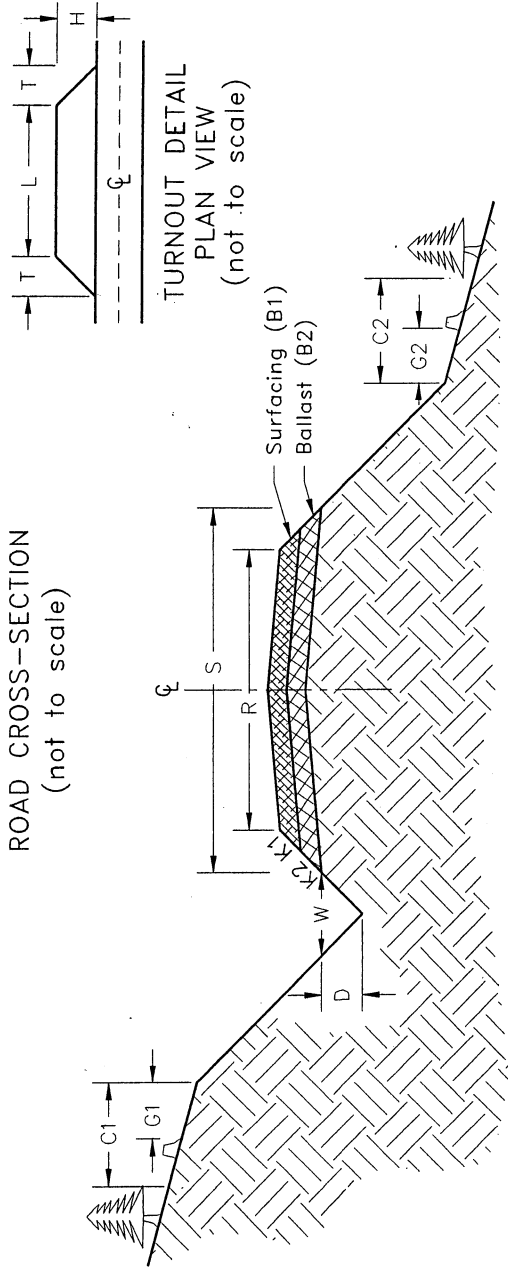
TYPICAL SECTION SHEET



NOTE: GRUBBING LIMITS FOR PRE-HAUL OR RECONSTRUCTION ARE 1' BEYOND EDGE OF ROAD OR BACK OF DITCH. CLEARING LIMITS POSTED WITH RIGHT OF WAY TAGS AND YELLOW FLAGGING. IF NOT POSTED, 5' BEYOND TOP OF CUT OR TOE OF FILL.

ROAD	CONSTRUCTION/ RECONSTRUCTION/ PRE-HAUL	FROM STATION	TO STATION	TOLERANCE CLASS	SUBGRADE WIDTH S	CROWN INCHES @ CENTERLINE	OUTSLOPE INCHES IN 10 FEET	ROAD WIDTH R	DITCH		GRUBBING LIMITS G1 G2	CLEARING LIMITS C1 C2	TURNOUT		COMMENTS
									WIDTH W	DEPTH D			TAPER T	LENGTH L	
A-4300	PRE-HAUL	41+50	45+00	C	12 ft	4 inches		12 ft	None	none	SEE NOTE	POSTED			
A-4365	Construction	0+00	2+40	C	12 ft		4 inches	12 ft			SEE NOTE	POSTED			
A-4365	Construction	2+40	4+40	C	14 ft	4 inches		12 ft	Minimal	Minimal	SEE NOTE	POSTED			
A-4365	Reconstruction	4+40	5+75	C	12 ft	4 inches		12 ft	Minimal	Minimal	SEE NOTE	POSTED			
A-4365	Reconstruction	5+75	11+20	C	12 ft		4 inches	12 ft			SEE NOTE	POSTED			
A-4365	Reconstruction	11+20	12+20	C	12 ft		4 inches	12 ft			SEE NOTE	5 FEET			
A-4365	Construction	12+20	17+00	C	12 ft		4 inches	12 ft			SEE NOTE	5 FEET			
A-4365	Construction	17+00	18+00	C	12 ft		4 inches	12 ft			SEE NOTE	POSTED			
A-4365	Construction	18+00	28+10	C	12 ft		4 inches	12 ft			SEE NOTE	5 FEET			
R-4000	Reconstruction	13+50	16+00	C	14 ft		4 inches	12 ft			SEE NOTE	POSTED			
R-4500	Construction	0+00	2+86	C	12 ft	4 inches		12 ft	Minimal	Minimal	SEE NOTE	POSTED			
R-4500	Construction	2+86	10+15	C	12 ft	4 inches		12 ft	2 ft	1 ft	SEE NOTE	5 FEET			
R-4500	Construction	10+15	23+23	C	12 ft		4 inches	12 ft			SEE NOTE	5 FEET			
R-4500	Construction	23+23	25+23	C	14 ft		4 inches	12 ft			SEE NOTE	POSTED			
R-4500	Construction	25+23	36+36	C	12 ft		4 inches	12 ft			SEE NOTE	POSTED			
R-4500	Construction	36+36	59+60	C	12 ft		4 inches	12 ft			SEE NOTE	5 FT			
R-4500	Construction	59+60	60+80	C	12 ft		4 inches	12 ft			SEE NOTE	POSTED			
R-4500	Construction	60+80	61+50	C	12 ft		4 inches	12 ft			SEE NOTE	5 FT			

ROAD CROSS-SECTION
(not to scale)



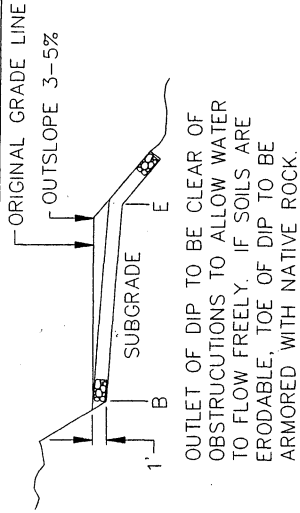
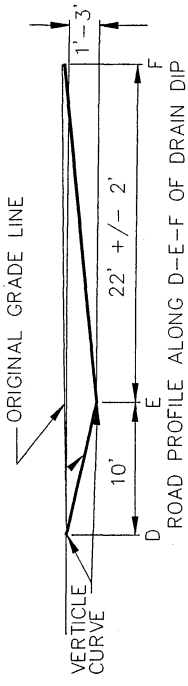
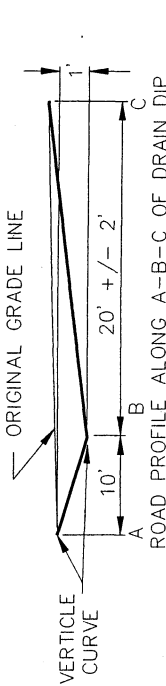
ROCK LIST

BALLAST

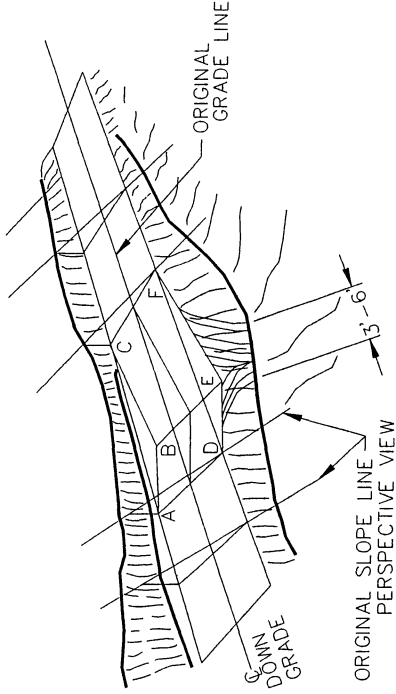
Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length	Width	Taper
									L	H	T
A-4365	2+40	3+40	2:1	6 in	30	2	60	Commercial			
R-4000	13+50	16+00	2:1	6 in	30	2.5	75	Commercial			
R-4500	23+23	25+23	2:1	6 in	30	2	60	Commercial			

BALLAST TOTAL_195 Cubic Yards

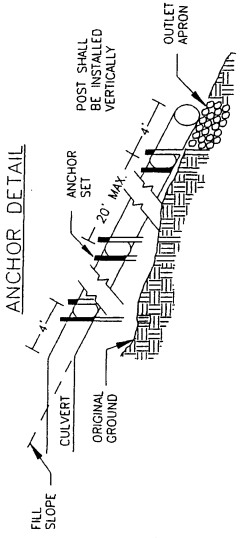
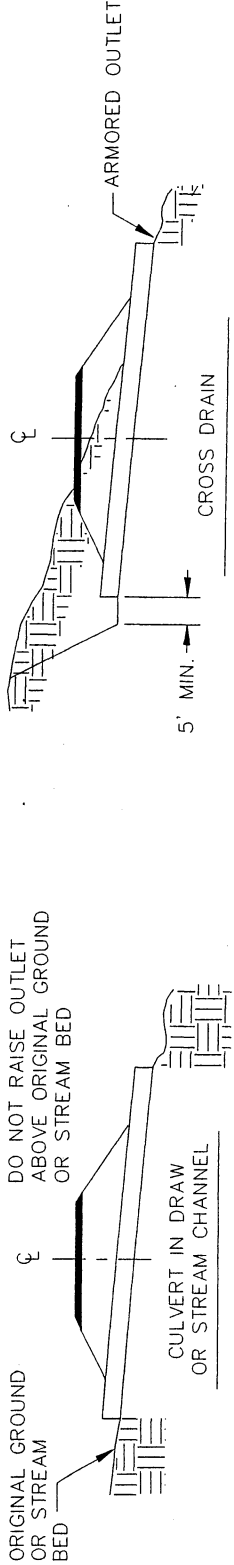
ROLLING DIP DETAIL



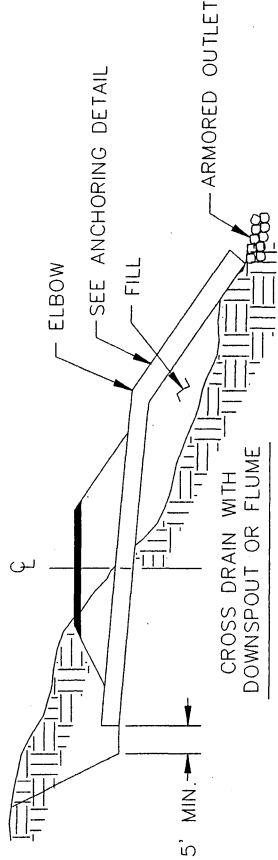
NOTE: PLAN OF DIP SHOWN IS FOR OUTSLOPED ROLLING DIP. DIPS MAY BE EITHER INSLOPED OR OUTSLOPED. WHEN INSLOPED, DIPS SHALL DRAIN FREELY INTO DITCHES OR CULVERT INLETS. WHEN OUTSLOPED, THEY SHALL DRAIN FREELY ONTO NATURAL GROUND. WHERE SOLD ARE ERODABLE, OUTLET SHALL BE ARMORED WITH NATIVE ROCK. THE MINIMUM CROSS GRADE FROM "B" TO "E" IS 4% GREATER THAN THE ORIGINAL ROAD GRADE. SKEW LINE B-E TO FIT LOW POINT IN DRAW, IF LOCATED IN NATURAL DRAIN.



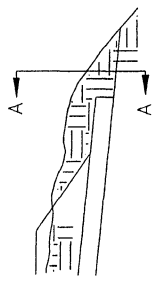
CULVERT AND DRAINAGE SPECIFICATION DETAIL



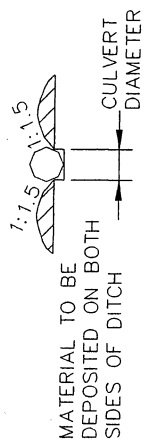
NOTE: MINIMUM COVER OVER CULVERT AT SHOULDER AT INLET SHALL BE 18" OR 1/2 THE CULVERT DIAMETER, WHICHEVER IS GREATER.
CATCH BASINS SHALL BE MINIMUM 5' WIDE BY 6' LONG.
CUT SLOPES AT CATCH BASINS SHALL BE AS SPECIFIED IN CLAUSE 51-8.



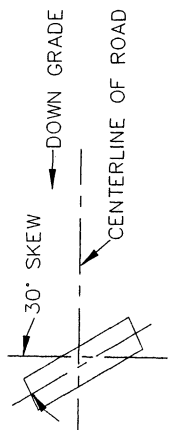
OUTLET DITCH



SECTION A-A



SKIEW DIAGRAM



CULVERT LIST

<u>Road</u>	<u>L-Station</u>	<u>Diameter</u>	<u>Gauge</u>	<u>Length</u>	<u>Headwall</u>	<u>Remarks</u>
A-4365	3+40	24 in	16	34 ft		In existing stream
	25+30	18 in	16	32 ft		On 4 ft fill
R-4500	24+23	18 in	16	36 ft		Small draw
R-4500	34+70	18 in	16	36 ft		Small draw

ROLLING DIP LIST

<u>Road</u>	<u>L-Station</u>	<u>Remarks</u>
A-4300	43+00	Drain left at small draw
	44+00	Drain right at existing water bar
A-4365	0+40	Drain left next to existing dip on A-4300
	2+90	Drain left before stream
	3+80	Drain left after stream
	5+75	Drain left with ditchout
	12+20	Drain left with ditchout
R-4000	14+00	Drain right at low spot
R-4500	4+00	Drain left at low spot+-
	10+15	Drain right
	25+75	Drain right at small draw
	36+90	Drain right at low spot
	41+20	Drain right at low spot
	44+35	Drain right at low spot
	49+00	Drain right at low spot
	55+00	Drain right at low spot

TURNOUT LIST

<u>ROAD #</u>	<u>BEGIN L-STATION</u>	<u>END L-STATION</u>	<u>TURNOUT WIDTH</u>	<u>FULL WIDTH LENGTH</u>	<u>TAPER LENGTH</u>	<u>REMARKS</u>
A-4365	14+90	15+90	12 ft	50 ft	25 ft	On Right
R-4500	4+50	5+50	12 ft	50 ft	25 ft	Before curve
	12+65	13+65	12 ft	50 ft	25 ft	
	20+90	21+90	12 ft	50 ft	25 ft	
	32+00	33+00	12 ft	50 ft	25 ft	
	39+10	40+10	12 ft	50 ft	25 ft	
	47+50	48+50	12 ft	50 ft	25 ft	
	56+60	57+60	12 ft	50 ft	25 ft	

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

FOREST ACCESS ROAD
MAINTENANCE SPECIFICATIONS

A. Cuts and Fills

1. Maintain slope lines as constructed. Remove slides from the ditches and roadway. Replace fills to 1 1/2:1 slopes with selected material or as directed. Remove overhanging material from the cut slopes.
2. Material from slides or other sources requiring removal shall not be deposited in streams or at locations where it will erode into streams or water courses.
3. Undesirable slide materials and debris shall not be mixed into the surface material.

B. Surface

1. Grade and shape the road surface, turnouts, and shoulders to the original crown, inslope or outslope as directed to provide suitable traveled surface and surface water runoff in an even, unconcentrated manner.
2. Blading must not undercut the backslope at the bottom of the ditchline or cut into geotextile fabric on the road.
3. If required in writing by the SE Region Engineer, water shall be applied as necessary to abate dust.
4. Desirable surface material shall not be bladed off the roadway.
5. Replace surface material lost or worn away.
6. Remove berms except as directed by the State.
7. Barrel spread soft spots to prevent degradation of geotextile.

C. Drainage

1. Keep ditches and drainage channels at outlets and inlets of culverts clear of obstructions and functioning as intended.
2. Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This must be done even during periods of inactivity.
3. Add stable material at the outlet end of the cross drain culvert as needed to stabilize the soil.
4. Headwalls: maintain to the road shoulder level with material that will resist erosion.
5. Prevent sediment bearing surface runoff from entering live streams.

D. Structures

Repair bridges, culverts, cattle guards, fences, and other road structures to the condition required by the construction specifications.

E. End of Season

Do maintenance work to minimize damage from the elements such as blading to insure correct runoff, ditch, and culvert cleaning and water bars.

F. Debris

Remove fallen timber, limbs, and stumps from the slopes or roadway.